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INTERRELATIONSHIPS BETWEEN SELECTED PSYCHOLOGICAL AND ACADEMIC MEASURES IN AN EXPERIMENTAL PROGRAM FOR "LOW-ABILITY" STUDENTS.

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GRADES OF 64 STUDENTS IN A SPECIAL PSYCHOLOGY CLASS FOR LOW-ABILITY STUDENTS WERE CORRELATED WITH SCORES ON SELECTED APTITUDE, ACHIEVEMENT, AND MOTIVATIONAL MEASURES. READING COMPREHENSION WAS THE BEST PREDICTOR OF SUCCESS. ACADEMIC ACHIEVEMENT TEST SCORES PREDICTED GRADES BETTER FOR WOMEN THAN FOR MEN. IN GENERAL, SCORES ON VARIOUS TESTS OF ACADEMIC APTITUDES PREDICTED SUCCESS FOR WOMEN BUT NOT FOR MEN. VERBAL MEASURES APPEAR TO BE BETTER PREDICTORS THAN NONVERBAL. FACTORS RELATED TO SUCCESS IN THIS LOW-ABILITY GROUP TEND TOWARD THE COGNITIVE IN WOMEN AND AFFECTIVE IN MEN. TABLES COMPARE THIS GROUP WITH VARIOUS NORM GROUPS AND SHOW THE CORRELATIONS BETWEEN TESTS AND GRADES. (WO)

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LOS ANGELES CITY COLLEGE

INTERRELATIONSHIPS BETWEEN SELECTED PSYCHOLOGICAL AND ACADEMIC MEASURES IN AN EXPERIMENTAL PROGRAM FOR "LOW-ABILITY" STUDENTS
(A follow-up to Counseling Center Research Study #64-15)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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LOS ANGELES

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I. INTRODUCTION

This is a follow-up study on Counseling Center Research Study #64-15, "An Experimental Program for Low-ability Students" (First Progress Report). In the aforementioned study, characteristics of 64 students in the areas of scholastic and vocational aptitude, academic achievement, motivation and personality, and family background were reported on. This group began with 64 students (40 females and 24 males), the majority of whom were negro. The group was selected randomly from the students under 22 years of age and not foreign speaking, who scored in the lowest decile on the School and College Aptitude Test (SCAT) based on national college freshmen norms. These students were placed on probation and assigned to a block program including basic English and Introduction to Psychology.

II. PURPOSE

The purpose of this report is to present the results of a correlational study carried out to answer the following questions:

1) To what degree are selected aptitude, achievement, and motivational measures related to grades in special courses in introductory psychology (Psychology 30)?
2) To what degree are selected aptitude and achievement measures related?
3) To what degree are selected motivational characteristics related to aptitude and achievement measures?

III. PROCEDURE

A distribution was taken, of aptitude, achievement, and motivational scores[1] of students whose grades fell in the upper and lower 25% of the class in Psychology 30.

A correlational study[2] was made of those variables appearing to have predictive value or otherwise of particular interest. Correlations were obtained for males alone, females alone, and the total group (males and females combined.) Since all students did not take all tests, the size of the groups varied as follows: males, N = 20 to 24; females, N = 36 to 40; total group N = 56 to 64.

Table 1 indicates the correlations that were selected for computation. (All scales of the Edward & the Values Inventories were used).

IV. RESULTS

1. Table 1 shows the correlations that were significant at or beyond the .05 level.
2. There were 513 correlations computed, out of which 112 were significant at or beyond the .05 level. This is a greater number of significant correlations than would be expected by chance (at .05 level) out of the total number computed.
3. 47/171 correlations were significant for females, 11/171 were significant for males, and 54/171 were significant for the total group.
4. Aptitude and achievement scores for the total group appear to be highly related to grades in Psychology 30. However, for males alone this relationship does not hold, except in the case of the reading placement test.

[1] See appendix for list of tests used.

[2] Mr. Marshall Elder, Associate Professor of Mathematics carried out the correlational computations on the Bendix G 15 at L.A.C.C.

The motivational scores are related to grades, for the total group, only in the case of need for order (inversely).

5. The achievement tests and the GATB "G" scores appear to be related to one another for the total group. This relationship holds for females as a group, but not for males.
6. The motivational scores show a very limited relationship to aptitude and achievement scores. For the total group, the need for order is conspicuous in showing a negative correlation, i.e, the higher the need for order the lower the grade, aptitude score, and achievement score. Also related in some ways, are the needs for intraception, heterosexuality, endurance, and an esthetic value orientation. Of the motivational scales, the one showing the most relationship to achievement and aptitude scores appears to be the need for order for females, while for males, heterosexuality and intraception appear to be most related.

   The Values Scales showing relationships in this area are Esthetic for female and Theoretical and Religious for males.

   The Study Habit scale shows a relationship to vocabulary and phonics for females as well as for the total group. It is also related to timed reading comprehension for the group as a whole. Study Habits of males do not appear related to grades, aptitude, or achievement scores.
7. The SRA Non-Verbal aptitude scale and the SRA Verbal aptitude scale, administered under "power" conditions, are insignificantly related to grades for the total group and for males. The Non-Verbal measure is related to grades for females.

TABLE 1 Significant Correlations Between Selected Aptitude, Achievement, Motivation, and Course Grade Scores

		Sex	SCAT	SRA-V	SRA N-V	"G"	Cal Voc	Cal Comp.	Read Plcmt	Phon-ics	List.	SSHA	Grades
	APTITUDES		1	2	4	5	7	8	9	10	11	18	
1	SCAT Total	F M T				—			—		—		—
2	(Timed) SRA Verbal Total	F M T											—
3	(Un-timed) SRA Verbal Total	F M T											=
4	SRA Non-Verbal	F M T											—
5	"G" GATB	F M T					—	—	—	—	—	=	—
6	Raven Progressive Mat.	F M T	= —	— —		—			—		—		—
	ACHIEVEMENT												
7	Cal. Reading Vocabulary	F M T				—		—	—		—	—	—
8	Cal. Reading Comprehension	F M T				—	—			—	—	=	—
9	SRA Reading Placement	F M T				—	—			—	—	= = =	
10	Phonics	F M T				—		— —	—		—	—	—
11	Listening Comprehension	F M T				—	—	—	—	—		= = =	—
	MOTIVATIONAL -Edwards Pers. Preference Sch.												
12	Order	F M T	—	—	—	—			—		—		—
13	Interoception	F M T	= —	—	—	—			—		—		—
14	Heterosexuality	F M T	—	—	—	—			—		—		— —
15	Endurance	F M T									—		
	STUDY OF VALUES												
16	Theoratical	F M T				—			—		—		—
17	Esthetic	F M T				—			—		—		—
18	Religious	F M T				—			—		—		—
19	Survey of Study Habits & Attitudes	F M T				—	— —	—	—	—	—		—

— Insignificant

▭ No correlation computed

V. DISCUSSION

The study evokes more questions than it does answers.

Females appear to show that various academic skills and aptitudes are related to their grades, while males show no such relationship (other than on power reading test.) Does this reflect the degree of acculturation of the low ability female to the "academic style environs?"

Why isn't there a relationship in general between skills scores and grades for males? Why should a male who reads better than others in the group and who is interested in the opposite sex do better in class? The reading is understandable, but is it that a stated lack of need for relationship with the opposite sex reflects a condition that may in itself, or in conjunction with other conditions, lead to problems in studying and academic learning? One might be prone to dismiss this relationship of interest in the opposite sex to grades for males as an accidental correlation. But why is this interest also related to SCAT and listening comprehension scores? Is there an outside factor that contributes to both the motivational and cognitive measures?

What about the relationship between motivational factors and achievement and aptitude scores? For example, it appears that religious value orientations on the part of the males is related to reading level, but that those males with theoretical value orientation don't do as well in reading. Does this reflect cultural and personal factors, i.e., does a high religious orientation reflect a cultural background where e.g., Bible reading or religious thought represents a "book or study orientation" in an otherwise non-academic environment? Or might religious

orientation provide a means of "personal adjustment" or level of apparent "personal harmony?" Does a "theoretical" orientation reflect an analytical, detail-oriented approach to reading material which, in combination with a weak ability to synthesize and generalize, leads to a low reading comprehension level?

For females a high need for order is related to low scores in listening comprehension, SCAT, SRA Verbal scores, and grades. Does this higher need for order reflect an intolerance for ambiguity, an inflexibility or a tendency for compulsive behavior?

Why is the need for intraception (to observe and analyze motives or behavior of self and others) related positively to SRA Verbal scholastic aptitude test and negatively to the listening test for males? Could this need be a help when dealing with booklet material that can be reviewed and gone over, but a hindrance when dealing with orally presented material that is "said and gone?" Or could this orally presented test more quickly and intensively evoke anxieties about self and performance than a "concrete" test booklet that gives one "something to work with or do?"

Do these scales, standardized on "majority group students," have the same meaning for "minority group students?"

VI. CONCLUSION

1. Reading Comprehension level (untimed) at the beginning of the course predicts success in Psychology 30 for both males and females and is a better predictor than any other measure.
2. Academic skills, as measured by achievement tests, predict grades for females as a group, but not for males.

3. Non Verbal meesures, while related to grades, do not predict to grades as well as the SCAT or the SRA Verbal. (The SRA Verbal takes 15 minutes as opposed to the SCAT's 1½ hours and correlates as well.)
4. Motivational measures show a limited relationship to grades and to achievement and aptitude measures, but may have value in diagnostic procedures, developing teaching methods, counseling, or multiple predictor test batteries.
5. Males and females appear to differ in terms of what predicts success for them. (Cognitive for females and affective for males).
6. The academic nature of the program may not be adequate to really select out the "diamonds in the rough", since those who read best in the beginning do best in class -- a perpetuation of the formal academic learning situations in which these students have been unsuccessful until now.

VII. RECOMMENDATIONS

1. Make further studies to analyze male-female differences to determine whether differential learning procedures are warranted.
2. Develop methods and procedures for analyzing individuals in depth as opposed to group analysis.
3. Develop procedure for taking poorest readers and finding characteristics predictive of success among this group (to really find "diamond in the rough").
4. Analyze and develop criteria for success in the program. Consider the thought that an individual student's perception and feeling of success (in terms of his long and short range goals and his feelings about himself) are as significant criteria of success as test scores showing academic gains. There is a need to develop procedures whereby

a student will be aided in setting goals, determining means toward achieving the goals, and having opportunities to test them against reality.

5. Conduct further study in order to understand more fully the relationship between motivational factors and academic achievement. Needs and motives precede behavior. Perhaps learning skills and behaviors are too much emphasized in the beginning of the program at the expense of developing motivations and goals. That is, perhaps we should begin by using counseling procedures to increase the probability of freeing motivations and allowing for and aiding in "self discovery." These counseling procedures might be utilized prior to, and concurrently with academic remedial learning opportunities in class groups, small groups, individual tutoring situations, and/or automated teaching centers.
6. Develop resources for making referrals to other agencies and organizations that provide the kind of service appropriate to the students' needs.

APPENDIX

A. Means and Standard Deviations of Experimental "Low-Ability" Students and Norm Groups on Standardized Tests.

	Experimental Group				Norm Group *		
TEST	Sex	N	Mean	Std.Dev.	Group	Mean	Std.Dev.
Aptitudes							
SCAT Total	Total	64	29.61	5.48	1	57.4	19.5
SRA Verbal Total (Timed)	Total	56	29.59	9.50	2	45.00	11.5
SRA Verbal Total (Untimed)	Total	57	44.28	4.37		---	---
SRA Non Verbal	Total	57	41.67	4.34	2	42.3	5.5
"G" (GATB)	Total	58	86.07	3.53	2	100	20
Raven Progressive Matrices	Total	64	33.44	7.88	3	48.00	6
Achievement							
California Reading Vocabulary	Total	64	22.44	8.36	4	42	12.5
California Reading Comprehension	Total	64	30.41	8.40	4	56	14.0
SRA Reading Placement	Total	63	21.27	5.43	5	32.5	6.0
Phonics	Total	64	55.11	15.65	6	58.9	15.3
Listening Comprehension	Total	64	34.41	8.47	5	48.0	8.5
Motivational Edwards Pers. Pref. Schdule							
Achievement	Total	63	13.18	3.49	7	14.38	4.36
Deference	Total	63	13.33	3.55	7	11.80	3.71
Order	Total	63	13.40	3.92	7	10.24	4.34

TEST	Experimental Group				Norm Group		
	Sex	N	Mean	Std.Dev.	Group	Mean	Std.Dev.
Movitional - (Continued)							
Exhibition	Female	39	13.46	3.68	7	14.40	3.52
	Total	63	13.71	3.76		14.34	3.59
Autonomy	Female	39	11.64	3.87	7	14.34	4.46
	Total	63	12.21	3.60		13.31	4.53
Affiliation	Female	39	15.05	3.31	7	15.00	4.32
	Total	63	14.30	3.63		16.19	4.36
Intraception	Female	39	16.59	3.81	7	16.12	4.23
	Total	63	16.48	3.65		10.32	5.01
Succorance	Female	39	11.51	3.74	7	10.74	4.70
	Total	63	11.07	3.98		11.63	4.65
Dominance	Female	39	11.74	3.56	7	17.44	4.88
	Total	63	12.64	3.56		15.83	5.02
Abasement	Female	39	17.28	3.40	7	12.24	4.93
	Total	63	16.57	3.60		13.16	5.14
Nurturance	Female	39	16.18	4.36	7	14.04	4.80
	Total	63	15.62	4.40		15.22	4.76
Change	Female	39	17.33	3.50	7	15.51	4.74
	Total	63	17.05	3.88		16.35	4.88
Endurance	Female	39	15.85	5.22	7	12.66	5.30
	Total	63	15.97	5.22		12.65	5.25
Heterosexuality	Female	39	10.55	4.17	7	17.65	5.48
	Total	63	11.92	4.98		16.01	5.68
Ageression	Female	39	12.85	4.51	7	12.79	4.59
	Total	63	12.94	4.30		11.70	4.73
Consistency	Female	39	11.13	1.95	7	11.53	1.80
	Total	63	10.73	2.04		11.64	1.84

TEST	Experimental Group Sex	N	Mean	Std.Dev.	Norm Group Group	Mean	Std.Dev.
Study of Values							
Theoretical	Female	37	41.22	6.49	7	35.75	7.19
	Total	58	41.98	6.81		39.75	7.27
Economic	Female	37	35.41	5.56	7	37.87	7.30
	Total	58	35.79	5.36		40.33	7.61
Aesthetic	Female	37	35.95	5.55	7	42.67	8.34
	Total	58	36.21	6.67		38.88	8.42
Social	Female	37	42.45	5.50	7	42.65	7.02
	Total	58	43.40	5.77		39.56	7.03
Political	Female	37	40.42	5.78	7	37.84	6.23
	Total	58	41.12	5.31		40.39	6.44
Religious	Female	37	42.11	6.83	7	43.81	9.40
	Total	58	41.50	7.45		41.01	9.31
Survey of Study Habits & Attitudes	Female	40	28.25	8.20	4	31.8	10.1
	Total	64	29.78	9.72			
Grade in Course	Female	37	348.84	53.51		----	----
	Total	58	345.13	49.27		----	----

NORM GROUPS

1. L.A.C.C. Entering Freshmen (Fall 1964)
2. General Population (Test Manual)
3. L.A. City Schools, High School Seniors (30 minute time limit)
4. College Freshmen (Test Manual)
5. L.A.C.C. Psychology 1
6. Bottom 50%, Freshman English, @ City College of San Francisco
7. College (Test Manual)

M - male
F - female
T - male and female combined

-- - no data available

A P P E N D I X

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